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VIA ECFS

Mrs Marlene H. Dortch
Secretary Federal Communications Commission
445 12th Street, SW Washington, DC 20554

Subject: Streamlining Licensing Procedures for Small Satellites, IB Docket No. 18-86

Dear Mrs Dortch

We are very pleased to see the FCC actively encouraging the development and innovation of space industries through its proposed Streamlining Licensing proposals. It is critical to the success of the many start-ups looking to build viable spaced base businesses that costs and red tape are kept to a minimum. It is also important that the FCC provide viable regulation which is competitive on an international basis to avoid jurisdiction shopping.

We have had the opportunity to review some of the comments already lodged in relation to Docket No. 18-86. We fully support of the comments made by the Samuelson-Glushko Technology Law & Policy Clinic on June 2 and June 21, in respect of the level of fees both in application and annual fees. Innovation should not be stifled by regulatory fees be they application fees or annual fees.

Furthermore we fully support the comments by Spire Global Inc on June 2. Specifically suggesting that "*propulsion-less satellites could be licensed under the new licensing process and deployed above 400 km (above the International Space Station) if they meet National Aeronautics and Space Administration's standards for orbital debris and above-station deployments.*"

We have the following comments on the proposed Streamlining Process

A 1 a. Number of Spacecraft

We do not understand the need to limit the number of spacecraft under any particular licence. We have identified over 20 start-up companies seeking to establish constellations of LEO's to provide global services each of which relies on multiple LEO's up to 300 – 400 spacecraft. Limiting the number of spacecraft available under the streamlined process will have the effect of defeating one of the main drivers for the introduction of the streamlining process i.e. encouragement of the nascent small satellite industry which will provide significant global economic benefits.

If there are specific reasons to restrict the number of spacecraft per licence then these should be addressed specifically rather than introducing an arbitrary limit on the number of spacecraft per licence.

A 1 b Planned On Orbital Lifetime

The Commission identifies that the ITU has found that the lifetime for small satellites is up to 10 years. The selection of a 5 year planned lifetime appears arbitrary and not consistent with encouraging innovation and entrepreneurship. Those businesses should be able to make economic decisions concerning the operational life of spacecraft in excess of 5 years e.g. trading off launch costs for the extra weight of mission prolonging propulsion. The Commission should retain the ability to approve On Orbital Lifetimes in excess of 5 years with a requirement that non operational spacecraft be deorbited as soon as safely possible.

A 1 c License Term

As discussed above On Orbital Lifetimes of small satellites can extend beyond 5 years and licences should reflect the planned economic life of spacecraft. Furthermore licences should be easily extended where the operational life can be shown to extend beyond the original licence terms provided that the spacecraft remains operation and can be operated safely.

The business models being considered by space entrepreneurs extend well beyond the proposed 5 years licence term and most if not all business cases are being predicated on the ability to launch replacement satellites to maintain coverage. It will take a minimum of 5 years to build a viable business. Prior to making their own solution customers will need to ensure that any investment in small satellite reliant businesses

will be able to provide reasonable returns over the life of their assets in many cases this will be in excess of 10 years. Regulatory uncertainty needs to be removed from the equation to ensure that customers can safely invest in long term assets. Accordingly the Commission should seek to make the licence extension routine and pacifistically provide for replacement satellites.

A 4. Revised Bond Requirement

The bond requirement was established to prevent warehousing. (para 49). We can see the need for bonding requirements for large satellites such that competitors do not seek to gain a competitive edge and then fail to deliver the economic benefits arising from the license. However for small satellites we question whether there is any benefit for an applicant to warehouse and accordingly we would support a move to no bonding or minimal binding under this process. Bonds will only serve to increase the cost of satellites and make financing more difficult for entrepreneurs.

B Frequency Considerations for Small Satellites

Over the last 5-10 years there has been an explosion of Internet of Things (IOT) devices which currently rely on Low Power Wide Area networks (LoRa, Sigfox, Zigbee, Bluetooth, Ingenu). These IOT networks successfully utilise the ISM bands within the rules set down for fair use of this public asset.

Current terrestrial networks are not ubiquitous and the service coverage areas are sporadic. Small Satellites offer the chance to provide affordable global coverage supporting rural and remote locations as well as those town and city locations where terrestrial networks are not currently available. Such space based networks will encourage the growth of the IOT market from the hundreds of millions to the billions providing significant economic benefit.

It is our expectation that space to earth communications will be below the noise floor and consequently will not have any dilatory impact on the operation of equipment with the band.

Accordingly provision should be made for small satellite operators to use the ISM band for two way communications with devices within the existing frameworks designed to preserve this public asset. Small satellite operators would accept they have no right to interference free use of these bands as is currently the case. The limitation of the use of these bands to devices is consistent with the original designation of the bands for Industrial, Scientific and Medical purposes.

Please contact me should you have any questions

Yours Sincerely

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cc, Rick Somerton